

App. Serial No. 10/550,853
Docket No.: NL030357 US1

Remarks

Claims 1-17 are currently pending in the patent application. For the reasons and arguments set forth below, Applicant respectfully submits that the claimed invention is allowable over the cited references.

In the instant Office Action dated April 3, 2007, claims 1-5 and 7-17 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Park *et al.* (U.S. Patent No. 6,391,749); and claim 6 stands rejected under 35 U.S.C. § 103(a) over Park *et al.*

Applicant respectfully traverses the Section 102(b) rejection of claims 1-5 and 7-17 because the cited portions of the Park reference fail to correspond to all of the claimed limitations. Regarding claim 1, the cited portions of the Park reference do not correspond to claimed limitations directed to using an inert gas as a carrier gas. The Office Action asserts that the Park reference teaches using hydrogen as a carrier gas; however, the cited portions of the Park reference teach that hydrogen is used as a reducing gas not as a carrier gas as asserted by the Office Action. *See, e.g.*, Col. 5:18-20. The Park reference further teaches that hydrogen gas easily reacts with the passivation layer (*i.e.*, hydrogen is not an inert gas). *See, e.g.*, Col. 4:33-37. Thus, the cited portions of the Park reference do not teach using an inert gas as the carrier gas as in the claimed invention. Accordingly, the Section 102(b) rejection of claim 1, as well as the rejection of claims 2-5 and 7-17 that depend from claim 1, is improper and Applicant requests that it be withdrawn.

Moreover, the cited portions of the Park reference further fail to correspond to claim 1 limitations directed to a gaseous compound including silicon being a mixture of a first gaseous silicon compound which is free of chlorine and a second gaseous silicon compound including chlorine. The cited portions of the Park reference teach using silane (SiH_4) gas, disilane (Si_2H_6), or dichlorosilane (SiH_2Cl_2) as the source gas (*i.e.*, one of these gases is used as the source gas). *See, e.g.*, Col. 3:38-43. The cited portions of the Park reference do not teach using a mixture of silane (*i.e.*, a gaseous silicon compound which is free of chlorine) and dichlorosilane (*i.e.*, a gaseous silicon compound including chlorine) as in the claimed invention (*see* claim 2). Therefore, the Section 102(b) rejection of claims 1-5 and 7-17 is improper and Applicant requests that it be withdrawn.

App. Serial No. 10/550,853
Docket No.: NL030357 US1

Applicant further traverses the Section 102(b) rejection of dependent claims 2-5 and 7-17 because the cited portions of the Park reference fail to correspond to numerous limitations present in these claims.

For example, regarding claim 8, the cited portions of the Park reference do not correspond to claimed limitations directed to replacing the inert carrier gas with a carrier gas including hydrogen. As discussed above in relation to the Section 102(b) rejection of claim 1, the cited portions of the Park reference teach using hydrogen as a reducing gas not as a carrier gas. *See, e.g.*, Col. 5:18-20. The Park reference teaches that during period T3 when the reducing gas is being introduced in to the chamber, the source gas is not being injected into the chamber. *See, e.g.*, Figure 1 and Col. 3:60-62. Thus, the Park reference does not teach switching from using an inert carrier gas to using hydrogen as the carrier gas as asserted by the Office Action. Accordingly, the Section 102(b) rejection of claim 8 is improper and Applicant request that it be withdrawn.

In another example, regarding claim 9, the cited portions of the Park reference do not correspond to claimed limitations directed to three time periods in which the carrier gas is switched from an inert gas in period one to hydrogen in period two and back to the inert gas in period three. The cited portions of the Park reference teach injecting a source gas during period T1, stopping the source gas and injecting an etching gas (*i.e.*, a highly reactive gas such as chlorine gas) during period T2, and stopping the etching gas and injecting a reducing gas (*e.g.*, hydrogen) during period T3. *See, e.g.*, Figure 1 and Col. 3:60 to Col. 4:37. Thus, the cited portions of the Park reference do not teach any corresponding switching between carrier gases as in the claimed invention. Therefore, the Section 102(b) rejection of claim 9 is improper and Applicant request that it be withdrawn.

In another example, regarding claim 13, the cited portions of the Park reference do not correspond to claimed limitations directed to using nitrogen as the carrier gas. The cited portions of the Park reference do not mention using nitrogen in any capacity. *See, e.g.*, Col. 5:11-28. Moreover, a word search of the Park reference fails to find any mention of the word nitrogen in the reference. Thus, the Section 102(b) rejection of claim 13 is improper and Applicant request that it be withdrawn.

App. Serial No. 10/550,853
Docket No.: NL030357 US1


Applicant respectfully traverses the Section 103(a) rejection of claim 6 (which is based upon the Park reference) because the cited portions of the Park reference fail to correspond to all of the claimed limitations as discussed above in relation to the Section 102(b) rejection of claim 1. In at least this regard, the Section 103(a) rejection of claim 6 is improper because claim 6 depends from claim 1. Accordingly, the Section 103(a) rejection of claim 6 is improper and Applicant request that it be withdrawn.

In view of the remarks above, Applicant believes that each of the rejections has been overcome and the application is in condition for allowance. Should there be any remaining issues that could be readily addressed over the telephone, the Examiner is asked to contact the agent overseeing the application file, Peter Zawilski, of NXP Corporation at (408) 474-9063 (or the undersigned).

Please direct all correspondence to:

Corporate Patent Counsel
NXP Intellectual Property & Standards
1109 McKay Drive; Mail Stop SJ41
San Jose, CA 95131

CUSTOMER NO. 65913

By: 
Name: Robert J. Crawford
Reg. No.: 32,122
Name: Bradley J. Barinsky
Reg. No.: 58,358
651-686-6633 x101
(NXPS.265PA)